Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A method for identifying a compound that modulates cell cycle arrest, the method comprising the steps of:

(i) determining in vitro the effect of the compound upon a flap structure specific endonuclease 1 (FEN1) polypeptide, wherein the FEN1 polypeptide has at least 95% identity to SEQ ID NO: 14 and wherein the FEN1 polypetide has nuclease activity;

~~(i)~~ (ii) contacting a cell comprising ~~a target~~ the FEN1 polypeptide or fragment thereof or inactive variant thereof, ~~selected from the group consisting of flap structure specific endonuclease 1 (FEN1), protein kinase C ζ (PKC ζ), phospholipase C β1 (PLC β1), protein tyrosine kinase 2 (FAK), protein tyrosine kinase 2b (FAK2), casein kinase 2 (CK2), cMET tyrosine kinase (cMET), REV1 dCMP transferase (REV1), apurinic/apyrimidinic nuclease 1 (APE1), cyclin dependent kinase 3 (CDK3), PIM1 kinase (PIM1), cell division cycle 7 kinase (CDC7L1), cyclin dependent kinase 7 (CDK7), cytokine inducible kinase (CNK), potentially prenylated protein tyrosine phosphatase (PRL-3), serine threonine kinase 2 (STK2) or (NEK4), cyclin dependent serine threonine kinase (NKIAMRE), or histone acetylase (HBO1), or fragment thereof with the compound, the target polypeptide encoded by the complement of a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoding a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO:14, 2, 4, 6, 8, 10, 12, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, and 36~~ wherein the FEN1 polypeptide is a heterologous protein; and

~~(ii)~~ (iii) determining the ~~chemical or phenotypic~~ cell cycle effect of the compound upon the cell comprising the ~~target~~ heterologous FEN1 polypeptide ~~or fragment thereof or inactive variant thereof~~, thereby identifying a compound that modulates cell cycle arrest.

2. (Currently amended) The method of claim 1, wherein the ~~chemical or phenotypic~~ cell cycle effect of the compound is ~~determined by measuring enzymatic activity selected from the group consisting of nuclease activity, kinase activity, lipase activity, transferase activity, phosphatase activity, and acetylase activity~~ compared to the effect of the compound on a cell comprising a dominant negative mutant FEN1 polypeptide.

3. (Withdrawn) The method of claim 1, wherein the chemical or phenotypic effect is determined by measuring cellular proliferation.

4. (Withdrawn) The method of claim 3, wherein the cellular proliferation is measured by assaying fluorescent marker level or DNA synthesis.

5. (Withdrawn) The method of claim 4, wherein DNA synthesis is measured by 3H thymidine incorporation, BrdU incorporation, or Hoescht staining.

6. (Withdrawn) The method of claim 4, wherein the fluorescent marker is selected from the group consisting of a cell tracker dye or green fluorescent protein.

7. (Original) The method of claim 1, wherein modulation is activation of cell cycle arrest.

8. (Original) The method of claim 1, wherein modulation is activation of cancer cell cycle arrest.

9. (Original) The method of claim 1, wherein the host cell is a cancer cell.

10. (Withdrawn) The method of claim 9, wherein the cancer cell is a breast, prostate, colon, or lung cancer cell.

11. (Original) The method of claim 9, wherein the cancer cell is a transformed cell line.

12. (Original) The method of claim 11, wherein the transformed cell line is A549, PC3, H1299, MDA-MB-231, MCF7, or HeLa.

13. (Withdrawn) The method of claim 9, wherein the cancer cell is p53 null or mutant.

14. (Withdrawn) The method of claim 9, wherein the cancer cell is p53 wild-type.

15. (Original) The method of claim 1, wherein the polypeptide is recombinant.

16. (Currently amended) The method of claim 1, wherein the polypeptide is encoded by a nucleic acid comprising a sequence of SEQ ID NO:13~~, 1, 3, 5, 7, 9, 11, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, or 35~~.

17. (Withdrawn) The method of claim 1, wherein the compound is an antibody.

18. (Original) The method of claim 1, wherein the compound is a small organic molecule.

19. (Withdrawn) The method of claim 1, wherein the compound is an antisense molecule.

20. (Withdrawn) The method of claim 1, wherein the compound is a peptide.

21. (Withdrawn) The method of claim 20, wherein the peptide is circular.

22. (Withdrawn) The method of claim 1, wherein the compound is an siRNA molecule.

23-44. (Cancelled)